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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,658	10/13/2000	TOKURO OZAWA	107260	7418

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EXAMINER

AWAD, AMR A

ART UNIT

PAPER NUMBER

2675

DATE MAILED: 02/26/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

PR4

# Office Action Summary

Application No.  
09/689,658

Applicant(s)  
OZAWA

Examiner  
Amr Awad

Art Unit  
2675



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Dec 11, 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 10-26 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-16, 18, and 20-26 is/are rejected.
- 7) ☒ Claim(s) 17 and 19 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

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## DETAILED ACTION

### *Drawings*

1. The corrected or substitute drawings were received on 12/11/2002. These drawings are accepted.

### *Claim Rejections - 35 U.S.C. § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 15 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Kusada (5,192,945).

As to independent claim 15, Kusada (figure 13) teaches sampling and hold switches (150 and 151) (col. 20, lines 51-62), N number of A/D converters (A/D 101 to 106 in figure 14) for converting a first analog signal that is supplied through a corresponding sampling switches (col. 21, lines 52-58), a storage device (latches 129-134) storing digital signal(col. 23, lines 1-5), and an N number of D/A converters, each D/A converter converts the digital signal held in the corresponding latches into a second analog to digital signal to be supplied to the plurality of pixels (col. 23, lines 1-8).

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As to claim 18, as can be seen in Kusada's figure 14, the storing device (buffers 107-112) stores the digital signal obtained from the A/D in parallel (i.e., within a fixed period).

***Claim Rejections - 35 U.S.C. § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 10-14, 16 and 20-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over in view of Maekawa (US patent NO. 6,256,024) in view of Kusada (US Patent 5,192,945).

As to independent claim 10, Kusada (figure 13) teaches sampling and hold switches (150 and 151) (col. 20, lines 51-62), N number of A/D converters (A/D 101 to 106 in figure 14) for converting a first analog signal that is supplied through a corresponding sampling switches (col. 21, lines 52-58), N number of latches (129-134) storing digital signal(col. 23, lines 1-5), and an N number of D/A converters, each D/A converter converts the digital signal held in the corresponding latches into a second analog to digital signal to be supplied to the plurality of pixels (col. 23, lines 1-8).

Kusada does not expressly teach that the number of latches is similar to the number of the A/D and the D/A.

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However, Maekawa teaches a liquid crystal display (figure 1) that includes a number of sampling switches (12-1 to 12-n) which is equal to the number of latches (16-1 to 16-n) and D/A converters (17-1 to 17-n) (col. 3, lines 48-53).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Maekawa having similar numbers of sampling switches, latches and D/A converters to be applied to Kusada's device so as motivated by Maekawa, to simplify the interface with the personal computer (col. 2, lines 18-21).

As to claim 11, Maekawa teaches that the N sampling switches, the N latches and the N D/A converters being disposed on one substrate (col. 3, lines 48-53).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Maekawa having the driving elements disposed on one substrate to be included in Kusada's device so as to reduce the size of the liquid crystal driving area as well as to reduce the cost.

As to independent claim 12, the claim is substantially similar to independent claim 10 adding to it the limitation of M number of scanning lines. As can be seen in figure 1, Maekawa (figure 1) teaches M number of scanning lines (19-1, 19-2, ...).

As to claim 13, Maekawa teaches that the LCD can be used for electronic apparatus (personal computer) (col. 2, lines 18-21).

As to independent claim 14, the claim is similar to the limitations of claims 11 and 12, and would analyzed similarly as claims 11-12.

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As to claim 16, Maekawa teaches that the N sampling switches, the N latches and the N D/A converters being disposed on one substrate (col. 3, lines 48-53).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Maekawa having the driving elements disposed on one substrate to be included in Kusada's device so as to reduce the size of the liquid crystal driving area as well as to reduce the cost.

As to claims 20-23, Maekawa teaches a driving circuit for thin film transistor liquid crystal display that can be in personal computer; see figure 1 and col. 2, lines 18-21.

As to independent claims 24 and 25, the limitations in claims are substantially similar to claims 10 and 11 and is analyzed as previously discussed with respect to claims 10 and 11.

As to claims 26, Maekawa teaches that the LCD can be used for electronic apparatus (personal computer) (col. 2, lines 18-21).

#### ***Allowable Subject Matter***

6. Claims 17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

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7. Applicant's arguments with respect to claims 10-26 have been considered but are moot in view of the new ground(s) of rejection.

*Conclusion*

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. **Any response to this final action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

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(703) 872-9314 (for Technology Center 2600 only)

*Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA., Sixth Floor (Receptionist).*

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amr Awad whose telephone number is (703) 308-8485.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Saras, can be reached on (703) 305-9720.

**Amr A. Awad**

02/20/2003.

  
**STEVEN SARAS**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**